when measured and evaluated according to the methodology provided by this regulation.

(b) *In-Use Standard.* [Reserved]

(c) *Low Noise Emission Product.* [Reserved]

§ 204.54 Test procedures.

(a) *General.* This section prescribes the conditions under which noise emission standard compliance Selective Enforcement Auditing or Testing by the Administrator must be conducted and the measurement procedures that must be used to measure the sound level and to calculate the average sound level of portable air compressors on which the test is conducted.

(b) *Test site description.* The location for measuring noise employed during noise compliance testing must consist of an open site above a hard reflecting plane. The reflecting plane must consist of a surface of sealed concrete or sealed asphalt and must extend one (1) meter beyond each microphone location. No reflecting surface, such as a building, signboard, hillside, etc., shall be located within 10 meters of a microphone location.

(c) *Measurement equipment.* The measurement equipment must be used during noise standard compliance testing and must consist of the following or its equivalent:

(1) A sound level meter and microphone system that conform to the Type I requirements of American National Standard (ANS) S1.4–1971, ''Specification for Sound Level Meters,'' and to the requirements of the International Electrotechnical Commission (IEC) Publication No. 179, ''Precision Sound Level Meters.''

(2) A windscreen must be employed with the microphone during all measurements of portable air compressor noise when the wind speed exceeds 11 km/hr. The windscreen shall not affect the A-weighted sound levels from the portable air compressor in excess of ±0.5 dB.

(3) The entire acoustical instrumentation system including the microphone and cable shall be calibrated before each test series and confirmed afterward. A sound level calibrator accurate to within ±0.5 dB shall be used. A calibration of the instrumentation shall be performed at least annually using the methodology of sufficient precision and accuracy to determine compliance with ANS S1.4–1971 and IEC 179. This calibration shall consist, at a minimum, of an overall frequency response calibration and an attenuator (gain control) calibration plus a measurement of dynamic range and instrument noise floor.

(4) An anemometer or other device accurate to within ±10 percent shall be used to measure wind velocity.

(5) An indicator accurate to within ±2 percent shall be used to measure portable air compressor engine speed.

(6) A gauge accurate to within ±5 percent shall be used to measure portable compressor air pressure.

(7) A metering device accurate to within ±10 percent shall be used to measure the portable air compressor compressed air volumetric flow rate.

(8) A barometer for measuring atmospheric pressure accurate to within ±5 percent.

(9) A thermometer for measuring temperature accurate to within ±1 degree.

(d) *Portable air compressor operation.* The portable air compressor must be operated at the design full speed with the compressor on load, delivering its rated flow and output pressure, during noise emission standard compliance testing. The air discharge shall be provided with a resistive loading such that no significant pressure drop or throttling occurs across the compressor discharge valve. The air discharge shall be piped clear of the test area or fed into an effective silencer. The sound pressure level due to the air discharge shall be at least 10 dB below the sound pressure level generated by the portable air compressor.

(e) *Test conditions.* Noise standard compliance testing must be carried out under the following conditions:

(1) No rain or other precipitation,

(2) No wind above 19 km/hr,

(3) No observer located within 1 meter, in any direction, of any microphone location, nor between the test unit and any microphone,

(4) Portable air compressor sound levels, at each microphone location, 10 dB or greater than the background sound level,

(5) The machine shall have been warmed up and shall be operating in a stable condition as for continuous service and at its maximum rated capacity. All cooling air vents in the engine/compressor enclosure, normally open during operation, shall be fully open during all sound level measurements. Service doors that should be closed during normal operation (at any and all ambient temperatures) shall be closed during all sound level measurements.

(f) *Microphone locations.* Five microphone locations must be employed to acquire portable air compressor sound levels to test for noise standard compliance. A microphone must be located 7 ±.1 meters from the right, left, front, and back sides and top of the test unit. The microphone position to the right, left, front, and back sides of the test unit must be located 1.5 ±.1 meters above the reflecting plane.

(g) *Data required.* The following data must be acquired during noise emission standard compliance testing:

(1) A-weighted sound level at one microphone location prior to operation of the test unit and at all microphone locations during test unit operations, as defined in paragraph (d) of this section.

(2) Portable air compressor engine speed.

(3) Portable air compressor compressed gas pressure.

(4) Portable air compressor flow rate.

(5) All other data contained in Appendix I, Table IV.

(h) *Calculation of average sound level.* The average A-weighted sound level from measurements at the specified microphone locations must be calculated by the following method:

L=10 log (1/5[Antilog L_1/10+Antilog L_2/10+Antilog L_3/10+ Antilog L_4/10+ Antilog L_5/10])

Where:

L=The average A-weighted sound level (in decibels)
L_1=The A-weighted sound level (in decibels) at microphone position 1
L_2=The A-weighted sound level (in decibels) at microphone position 2
L_3=The A-weighted sound level (in decibels) at microphone position 3
L_4=The A-weighted sound level (in decibels) at microphone position 4
L_5=The A-weighted sound level (in decibels) at microphone position 5

(i) The Administrator may approve applications from manufacturers of portable air compressors for the approval of test procedures which differ from those contained in this part so long as the alternate procedures have been demonstrated to correlate with the prescribed procedure. To be acceptable, alternate testing procedures shall be such that the test results obtained will identify all those test units which would not comply with the noise emission limit prescribed in § 204.52 when tested in accordance with the procedures contained in § 204.54 (a) through (h). Tests conducted by manufacturers under approved alternate procedures may be accepted by the Administrator for all purposes.

(j) *Presentation of information.* All information required by this section may be recorded using the format recommended on the Noise Data Sheet shown in Appendix I, Table IV.

[41 FR 2172, Jan. 14, 1976, as amended at 41 FR 8347, Feb. 26, 1976; 47 FR 57711, Dec. 28, 1982]

§ 204.55 Requirements.

§ 204.55–1 General standards.

(a) Every new compressor manufactured for distribution in commerce in the United States which is subject to the standards prescribed in this subpart and not exempted in accordance with § 204.5:

(1) Shall be labeled in accordance with the requirements of § 204.55–4.

(2) Shall conform to the applicable noise emission standard established in § 204.52

(b) [Reserved]

[41 FR 2172, Jan. 14, 1976, as amended at 47 FR 57711, Dec. 28, 1982]

§ 204.55–2 Requirements.

(a)(1) Prior to distribution in commerce, compressors of a specific configuration must verify such configurations in accordance with this subpart.

(2) [Reserved]

(3) At any time with respect to a configuration under this subpart, the Administrator may require that the manufacturer ship test compressors to an